

THE FOLLOWING ARE THE ENGLISH TRANSLATION
OF ANNEXES TO THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT (ARTICLE 34):

Amended Sheets (Pages 27-30)

CLAIMS

1. A laser processing apparatus for irradiating
a work piece with a laser beam to process the
5 irradiated portion comprising:
a laser oscillator for generating said laser
beam;
an irradiation position control optical system
for causing said laser beam to irradiate a
10 predetermined position on said work piece; and
a plurality of optical path systems for guiding
the laser beam emitted from said laser oscillator to
said irradiation position controlling optical system,
wherein said plurality of optical path systems
15 includes at least a first optical path system that
guides said laser beam emitted from said laser
oscillator to said irradiation position control
optical system without changing its energy
distribution in the direction perpendicular to the
20 optical axis of the laser beam and a second optical
path system that guides said laser beam emitted from
said laser oscillator to said irradiation position
control optical system while changing its energy
distribution in the direction perpendicular to the
25 optical axis of the laser beam.

2. A laser processing apparatus for irradiating

a work piece with a laser beam to process the irradiated portion comprising:

a laser oscillator for generating said laser beam;

5 an irradiation position control optical system for causing said laser beam to irradiate a predetermined position on said work piece; and

a plurality of optical path systems for guiding the laser beam emitted from said laser oscillator to
10 said irradiation position controlling optical system,

wherein said plurality of optical path systems includes at least a first optical path system that guides said laser beam emitted from said laser oscillator to said irradiation position control
15 optical system without changing the energy intensity of the laser beam and a second optical path system that changes the energy distribution in the direction perpendicular to the optical axis thereof by preventing a portion of the laser beam emitted from
20 said laser oscillator from reaching said irradiation position control optical system.

3. A laser processing apparatus according to claim 1 or 2, further comprising optical path
25 switching means for switching the optical path that is used in guiding said laser beam.

4. A laser processing apparatus according to claim 1 or 2, wherein the switching of said optical path systems is performed during an off-time of the pulse irradiation of said laser beam.

5

5. A laser processing apparatus according to claim 1 or 2, wherein the second optical path system that changes the energy distribution of said laser beam includes a mask that makes the energy
10 distribution in the direction perpendicular to the optical axis of the laser beam substantially uniform.

6. A laser processing apparatus according to claim 5, wherein the second optical path system that
15 changes the energy distribution of said laser beam includes a homogenizer that makes the energy distribution in the direction perpendicular to the optical axis of the laser beam substantially uniform.

20 7. A laser processing method for irradiating a work piece with a laser beam to process the irradiated portion, comprising:

a first processing step of irradiating a predetermined position on said work piece with a
25 laser beam emitted from a laser oscillator without changing its energy distribution in the direction perpendicular to the optical axis of said laser beam;

a laser beam switching step of stopping the irradiation with said laser beam that is not changed in its energy distribution and guiding a laser beam that is formed by changing the energy distribution in
5 the direction perpendicular to the optical axis, of the laser beam emitted from said laser oscillator to said predetermined position on said work piece; and

a second processing step of performing irradiation with said laser beam that has been
10 changed in the energy distribution.

8. A processing method according to claim 7, wherein said laser beam switching step is performed during an off-time of the pulse irradiation of the
15 laser beam emitted from said laser oscillator.

9. A method according to claim 7, wherein the energy intensity distribution of said laser beam that has been changed in the energy distribution guided
20 onto said work piece is made uniform.

10. A method of manufacturing a circuit board comprising a step of performing a perforation processing on a ceramic green sheet and a step of
25 filling the hole formed with an electrode material, said perforation processing comprising:

a first processing step of irradiating a

predetermined position on said ceramic green sheet
with a laser beam emitted from a laser oscillator
without changing its energy distribution in the
direction perpendicular to the optical axis of said
5 laser beam;

a laser beam switching step of stopping the
irradiation with said laser beam that is not changed
in its energy distribution and guiding a laser beam
that is formed by changing the energy distribution in
10 the direction perpendicular to the optical axis, of
the laser beam emitted from said laser oscillator to
said predetermined position on said work piece; and

a second processing step of performing
irradiation with said laser beam that has been
15 changed in the energy distribution.